also states that by collecting the drops of resin which collect in spring upon felled pine and fir trees about 60 liters of oil could be secured from every cord of wood.

The Technical Department, Aircraft Production, of the Ministry of Munitions of Great Britain has prepared a detailed report on an example of the new German 300-h.p. Maybeck aero engine taken from a Rumpler biplane which was brought down in France in January last. These engines are described in the report as undoubtedly representing a great improvement in general design and efficiency as compared with the old 240-h.p. Maybach engines found in Zeppelin airships. The quality of the workmanship of every part, including the exterior finish throughout, is exceptionally good, and the working clearances are carried to very fine limits. Every part, nevertheless, shows the usual German characteristics of strength and reliability, combined with standardization and ease of manufacturing in preference to the saving of weight. The engine has six vertical cylinders with a bore of 6.5 in. and a stroke of 7.09 in., and weighs 911 pound complete with propeller boss and exhaust manifold, but without fuel or oil. On an hour's test, running at the normal speed of 1,400 rvolutions a minute, it gave on the average 290 b.h.p., the weight being thus a little over 3 pounds per h.p. The consumption of petrol was 0.55 pint and of lubricating oil 0.038 pint per b.h.p. hour. The C.4 type of Rumpler machine from which this engine was taken is a two-seater biplane designed for long-range artillery reconnaissance and photography. These machines are said to be generally flown at high altitudes—15,000 feet to 17,000 feet—until over the lines, and from French reports the 300 h.p. Maybach engines are more flexible and regular in running than the 260-h.p. Mercédès engines generally fitted in them. Their armament consists of one Spandau gun fixed in front of the pilot's seat and firing through the propeller, and one swivelling gun mounted in the observer's seat behind.

UNIVERSITY AND EDUCATIONAL NEWS

At a meeting of the General Municipal Council and the Chamber of Commerce at Bordeaux on September 10, the proposal to establish in honor of the President of the United States a Franco-American university of applied sciences, commerce and industry was unanimously adopted.

The Birmingham Metallurgical Society has planned to award scholarships at Birmingham University to technical school students in metallurgy. The purpose is to assist boys who otherwise would be unable to afford a university training in metallurgy.

Dr. H. C. McNeil, associate chemist in the Bureau of Standards, has been appointed acting professor of chemistry in George Washington University, Washington, D. C., succeeding Dr. Charles E. Munroe, who assumes the chairmanship of the committee of explosives investigations under the National Research Council.

William C. Morse, of Washington University, St. Louis, has been elected professor of geology at the Mississippi Agricultural and Mechanical College.

Professor Owen W. Mills, formerly of Westminster College, has been appointed professor of biology at Middlebury College.

DISCUSSION AND CORRESPONDENCE

DUAL QUEENS IN A COLONY OF HONEY BEES

During a recent visit, June 3–6, 1918, to the Massachusetts Agricultural College at Amherst, Mass., by the courtesy of Dr. B. N. Gates I was given the unusual opportunity of accompanying him on his inspection of the forty colonies of the bee yard.[1]

It has so frequently been stated that two queens are rarely found in one colony of honey bees that the occurrence of two queens, evidently mother and daughter, living side by side

[1] In addition to many interesting facts of honey bee behavior, I was able to collect material for a morphological study of the developmental stages of the three castes of honey bees. I am deeply grateful to Dr. Gates for his assistance and kindness in securing my material.